

## **REMARKS**

**[0001]** Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-5, 21-42, 49, and 50 are presently pending. Claims amended herein are 1, 21, 27, 33, 37, 38, 49, 50.

### **Formal Request for an Interview**

**[0002]** If the Examiner's reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can talk about this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

**[0003]** Please contact me to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for me, I welcome your call as well. My contact information may be found on the last page of this response.

### **Allowable Subject Matter**

**[0004]** Applicant would like to thank the Examiner for indicating allowability for claim 32. Further, Applicants can find no mention whatsoever of claim 36 in the present Office Action. Applicants presume that claim 36 remains allowable as previously indicated and thank the Examiner for indicating allowability of this claim as well. These claims have not been amended herein, and therefore remain allowable.

### **Claim Amendments**

**[0005]** Without conceding the propriety of the rejections herein and in the interest of expediting prosecution, Applicant amends claims 1, 21, 27, 33, 37, 38, 49, and 50 herein. Applicant amends claims to clarify claimed features. Such amendments are made to expedite prosecution and more quickly identify allowable subject matter. Such amendments are merely intended to clarify the claimed features, and should not be construed as further limiting the claimed invention in response to the cited references.

**[0006]** Claims 1, 21, 27, 33, 37, 38, 49, and 50 are amended to include subject matter wholly supported by the filed application. Support for the amendments these claims is found in the specification at least at pages 4-5 and paragraph 11 as well as pages 6-8 and paragraphs 27-29.

## **Substantive Matters**

### **Claim Rejections under § 112 1<sup>ST</sup> ¶**

**[0007]** Claims 1-5, 21-42, 49, and 50 are rejected under 35 U.S.C. § 112, 1<sup>st</sup> ¶. Notwithstanding the fact that claim 36 does not recite that which the Examiner contends, Applicant respectfully traverses this rejection. Furthermore, in light of the amendments presented herein, Applicant submits that these rejections are moot. Accordingly, Applicant asks the Examiner to withdraw these rejections.

### **Claim Rejections under § 102 and § 103**

**[0008]** The Examiner rejects claims 1-5, 21-23, 25-26, 37 and 49 under § 102. For the reasons set forth below, the Examiner has not shown that the cited reference anticipates the rejected claims.

**[0009]** In addition, the Examiner rejects claims 24, 28-38, 39-42 and 50 under § 103. For the reasons set forth below, the Examiner has not made a prima facie case showing that the rejected claims are obvious.

**[0010]** Accordingly, Applicant respectfully requests that the § 102 and § 103 rejections be withdrawn and the case be passed along to issuance.

**[0011]** The Examiner's rejections are based upon the following references alone and in combination:

- **Christiansen et al 6,369,969:** *Christiansen et al* US Patent No. 6,369,969 (issued April 9, 2002);
- **Hayashi 5,430,582:** *Hayashi* US Patent No. 5,430,582 (issued July 4, 1995);
- **Reed et al 6,052,248:** *Reed et al* US Patent No. 6,052,248 (issued April 18, 2000); and
- **Tuttle et al 6,108,151:** *Tuttle et al* US Patent No. 6,108,151 (issued August 22, 2000).

## **Anticipation Rejections**

**[0012]** Applicant submits that the anticipation rejections are not valid because, for each rejected claim, no single reference discloses each and every element of that rejected claim.<sup>1</sup> Furthermore, the elements disclosed in the single reference are not arranged in the manner recited by each rejected claim.<sup>2</sup>

### **Based upon Christiansen et al 6,369,969**

**[0013]** The Examiner rejects claims 1-5, 21-23, 25-26, 37 and 49 under 35 U.S.C. § 102(e) as being anticipated by Christiansen et al 6,369,969. Applicant respectfully traverses the rejection of these claims. Based on the reasons given below, Applicant asks the Examiner to withdraw the rejection of these claims.

### **Independent Claim 1**

**[0014]** Applicant submits that Christiansen et al 6,369,969 does not anticipate this claim because it does not disclose the following elements as recited in this claim:

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<sup>1</sup> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); also see MPEP §2131.

<sup>2</sup> See *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

- “a circuit operable to recover servo data from a servo signal generated by an electromagnetic read write head that is coupled to the circuit with a connection polarity set during installation of the head;”
- “a determinator coupled to the circuit and operable to determine from the recovered servo data whether the connection polarity is reversed.”

**[0015]** The Examiner indicates (Action, p. 3) the following with regard to this claim:

As to claim 1, Christiansen et al discloses head-connection-polarity detector, comprising: a circuit operable to recover servo data from a servo signal generated by an electromagnetic read write head that is coupled to the circuit, with a fixed connection polarity (fig. 2, MR head 20, 30, 34 and col. 3, lines 5-10); and a determinator coupled to the circuit and operable to determine the connection polarity from the recovered servo data (figs. 2-3A-B, 24, col. 3, lines 5-20) the polarity of the bias layer of the MR head is determined, and wherein this polarity determines if it has deviated from the preferred polarity, thus a preset polarity has already been set in the head).

**[0016]** Amended claim 1 recites “a connection polarity set during installation of the head” that is detectable to “determine... whether the connection polarity is reversed.” That is, as disclosed in paragraph 30 of the Application, a detector 62 includes a polarity independent Viterbi detector 100, which recovers the sync mark from the servo signal regardless of the head connection polarity and which includes a bank 102 of path history registers PH00 – PHZ, one register for each state that the Viterbi detector 100 recognizes. A comparator 104 detects the sync mark and the head connection polarity by comparing the

recovered servo data from the Viterbi detector 100 with the no inverted version of the sync mark stored in a register 106. The comparator 104 generates the Sync Mark Detect signal having one logic level when it detects the sync mark and another logic level otherwise, and generates the Head Polarity signal having one logic level when the head is properly connected (*i.e.*, not reversed) to the servo circuit 60 (FIG. 5) and another logic level when the head connection is inverted (*i.e.*, reversed).

**[0017]** Christiansen et al 6,369,969, however, is directed to determining a completely different characteristic of a circuit for a servo mechanism. Christiansen et al 6,369,969 teaches a data detector 30 that receives a polarity signal 28 that is indicative of a polarity of the bias layer (not the connection of the read head) within the MR read element within the MR head 20 (FIG. 2; col. 3, lines 1-9). The system in Christiansen et al 6,369,969 uses this bias layer polarity to adjust the readings obtained by the MR head during the life of the device. As the polarity of the bias layer has deviated from the preferred polarity, the polarity of the bias layer itself is modified (col. 3, lines 9-11) to compensate. However, whether or not the initial connection of the read head (which is always set during installation) is reversed or not reversed is a determination that Christiansen et al 6,369,969 cannot make. Despite being able to compensate for slight polarity shifts in its MR layer, the system of Christiansen et al 6,369,969 must necessarily assume a beginning connection polarity of the read head. It is this very problem that the recitations of claim 1 solve.

**[0018]** Consequently, Christiansen et al 6,369,969 does not disclose all of the elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

*Dependent Claims 2-5*

**[0019]** These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

*Independent Claim 21*

**[0020]** Applicant submits that Christiansen et al 6,369,969 does not anticipate this claim because it does not disclose the following elements as recited in this claim:

- “a comparator coupled to the Viterbi detector and operable to determine if the connection polarity is coupled in an unexpected manner based on the recovered synchronization mark.”

**[0021]** Amended claim 21 recites “a connection polarity set during manufacture” that is detectable to “determine if the connection polarity is coupled in an unexpected manner.” That is, a comparator generates a Head Polarity signal having one logic level when the head is properly connected (*i.e.*, not



reversed as expected) to the servo circuit 60 (FIG. 5) and another logic level when the head connection is inverted (*i.e.*, reversed as not expected).

**[0022]** Christiansen et al 6,369,969, however, is directed to determining a completely different characteristic of a circuit for a servo mechanism. Christiansen et al 6,369,969 teaches a data detector 30 that receives a polarity signal 28 that is indicative of a polarity of the bias layer (not the connection of read head itself). Despite being able to compensate for slight polarity shifts in this bias layer, the system of Christiansen et al 6,369,969 must necessarily assume a beginning connection polarity of the read head. It is this very problem that the recitations of claim 21 solve.

**[0023]** Consequently, Christiansen et al 6,369,969 does not disclose all of the elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

*Dependent Claims 22-23 and 25-26*

**[0024]** These claims ultimately depend upon independent claim 21. As discussed above, claim 21 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claims 37 and 49

**[0025]** Applicant submits that Christiansen et al 6,369,969 does not anticipate these claims because it does not disclose all of the recitations in these claims. Applicant submits that these claims are allowable for at least the same reasons as presented above with respect to claims 1 and 21.

## **Obviousness Rejections**

### **Lack of *Prima Facie* Case of Obviousness (MPEP § 2142)**

**[0026]** Applicant disagrees with the Examiner's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a *prima facie* case have not been met. To establish *prima facie* obviousness of a claimed invention, all of the claim recitations must be taught or suggested by the prior art<sup>1</sup> and "all words in a claim must be considered in judging the patentability of that claim against the prior art."<sup>2</sup> Further, if prior art, in any material respect teaches away from the claimed invention, the art cannot be used to support an obviousness rejection.<sup>3</sup> Moreover, if a modification would render a reference unsatisfactory for its intended purpose, the suggested modification / combination is impermissible.<sup>4</sup>

### **Based upon Christiansen et al 6,369,969 and other cited prior art**

**[0027]** The Examiner rejects claims 4, 21-42, 49, and 50 under 35 U.S.C. § 103(a) as being unpatentable over Christiansen et al 6,369,969 in view of some combination of Hayashi 5,430,582, Reed 6,052,248, and Tuttle et al 6,108,151.

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<sup>1</sup> *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)

<sup>2</sup> *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)

<sup>3</sup> *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed Cir. 1997)

<sup>4</sup> See MPEP § 2143.01

Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

Independent Claim 27

**[0028]** Applicant submits that the combination of Christiansen et al 6,369,969 and Tuttle et al 5,796,535 does not teach or suggest at least the following elements as recited in this claim:

- “a comparator coupled to the first Viterbi detector and operable to determine if the phase of the servo signal is reversed based on the recovered synchronization mark[.]”

**[0029]** The Examiner indicates (Action, p. 7) the following with regard to this claim:

As to Claim 27, [it] has limitations that are similar to those recited in the rejection or claim 21 and are met by the reference as discussed above. Claim 27, however, also recites: a sampling circuit coupled to receive and operable to generate samples of a servo signal that represents a servo-synchronization mark and that has a phase that represents a connection polarity of an electromagnetic read head; and wherein the comparator is operable to determine the phase of the servo signal. However, Tuttle discloses such (col.8, lines 25-54: col. 11 lines, 55-62). It would have been obvious to one of ordinary skill in the art to modify the combination's invention with the teaching of Tuttle in order to synchronize the servo data according to the polarity being read by the head device.

**[0030]** Applicant respectfully disagrees. Amended claim 27 recites “a connection polarity set during assembly” that is detectable to “determine if the connection polarity is reversed[.]” That is, a comparator generates a Head Polarity signal having one logic level when the head is properly connected (*i.e.*, not reverse connected) to the servo circuit 60 (FIG. 5) and another logic level when the head connection is inverted (*i.e.*, reverse connected).

**[0031]** Christiansen et al 6,369,969, however, is directed to determining a completely different characteristic of a circuit for a servo mechanism. Christiansen et al 6,369,969 teaches a data detector 30 that receives a polarity signal 28 that is indicative of a polarity of the bias layer (not the connection). Despite being able to compensate for slight polarity shifts in this bias layer, the system of Christiansen et al 6,369,969 must necessarily assume a beginning connection polarity of the read head. It is this very problem that the recitations of claim 21 solve.

**[0032]** Moreover, applicants submit that the Office action is using hindsight reasoning. As a matter of law, obviousness may not be established using hindsight obtained in view of the teachings or suggestions of the applicants. *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). To guard against the use of such impermissible hindsight, obviousness needs to be determined by ascertaining whether the applicable prior art contains any

suggestion or motivation for making the modifications in the design of the prior art article in order to produce the claimed design. The mere possibility that a prior art teaching could be modified or combined such that its use would lead to the particular limitations recited in a claim does not make the recited limitation obvious, unless the prior art suggests the desirability of such a modification. See *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

**[0033]** As shown above, the combination of Christiansen et al 6,369,969 and Tuttle et al 5,796,535 does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

*Dependent Claims 28-31*

**[0034]** These claims ultimately depend upon independent claim 27. As discussed above, claim 27 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

**[0035]** Even when additional prior art is introduced, as is the case with respect to the reference of Hayashi 5,430,582, the prior art of record still fails to teach or suggest all of the recitations of the independent claim. Therefore, these dependent claims are also allowable.

Independent Claim 33

**[0036]** Applicant submits that the combination of Christiansen et al 6,369,969 and Tuttle et al 5,796,535 does not teach or suggest the recitations of claim 33 for at least the same reasons as discussed above with respect to claim 27.

Dependent Claims 34-36

**[0037]** These claims ultimately depend upon independent claim 33. As discussed above, claim 33 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

**[0038]** Even when additional prior art is introduced, as is the case with respect to the reference of Hayashi 5,430,582, the prior art of record still fails to teach or suggest all of the recitations of the independent claim. Therefore, these dependent claims are also allowable.

Independent Claim 38

**[0039]** Applicant submits that the combination of Christiansen et al 6,369,969 and Hayami 6,477,125 does not teach or suggest the recitations of

claim 33 for at least the same reasons as discussed above with respect to claim 27.

Dependent Claims 39-42

**[0040]** These claims ultimately depend upon independent claim 38. As discussed above, claim 38 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

**[0041]** Even when additional prior art is introduced, as is the case with respect to the references of Hayashi 5,430,582, the prior art of record still fails to teach or suggest all of the recitations of the independent claim. Therefore, these dependent claims are also allowable.

Independent Claims 36 and 50

**[0042]** Applicant submits that the combination of Christiansen et al 6,369,969, Tuttle et al 5,796,535 and Hayami 6,477,125 does not teach or suggest the recitations of claim 33 for at least the same reasons as discussed above with respect to claim 27.



### **Dependent Claims**

**[0043]** In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant requests that the Examiner withdraw the rejection of each dependent claim where its base claim is allowable.

#### **Dependent Claim 24**

**[0044]** This claim ultimately depends upon independent claim 21. As discussed above, claim 21 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, this claim may also be allowable for additional independent reasons.

## **Conclusion**

**[0045]** All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action.** Please call or email me at your convenience.

**[0046]** In the event additional fees are due as a result of the filing of this document, the undersigned hereby authorizes the charge of any deficiency of fees submitted in the application, or the credit of any overpayment, to Deposit Account No. 07-1897.

Respectfully Submitted,

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